Arizona Department of Health Services

Clinician Fact Sheet: Measles

Epidemiology

- Highly contagious. It is arguably the most contagious disease in existence
- Transmission is **airborne,** by respiratory droplets, or by contact with secretions

Incubation Period

- Usually 8-12 days. Average time between exposure and subsequent cases is 14 days, with a range of 7-18 days.

Clinical Presentation

- Prodrome (usually 2-4 days) of stepwise increasing fever (often reaching 103°-105°F), cough, coryza, and/or conjunctivitis (the "3 C's")
- Koplik's spots (small bluish white spots on an erythematous base) on buccal mucosa sometimes seen 1-2 days before rash are pathognomonic
- Maculopapular rash begins at hairline, then face and upper neck, then proceeds downward and outward, reaching hands and feet
- During an outbreak, a probable case is generally defined as:
  - Generalized rash lasting >3 days, and
  - Temperature >38.3°C (101°F), and
  - Cough, coryza or conjunctivitis
- Other symptoms may include anorexia, diarrhea (especially in infants), and generalized lymphadenopathy

Variations

- Atypical measles – in persons who previously received inactivated ("killed") measles vaccine, given in the U.S. from 1963 through 1967 – fever, pneumonia, pleural effusions and edema
- Modified measles – in persons who received IG as prophylaxis, in infants who have some maternal antibody, or in previously vaccinated persons – prolonged incubation period, mild prodrome, sparse rash of short duration
- In immunocompromised persons, disease may be severe and prolonged without typical rash

Differential Diagnosis

- Rubella, scarlet fever, drug rashes, serum sickness, roseola infantum, infectious mononucleosis, adenovirus, echovirus, and coxsackievirus

Laboratory

- IgM capture serology (but 20% false negative during first 72 hrs of rash)
- Alternatively, acute and convalescent paired IgG serology 10-30 days apart
- Testing is available at the Arizona State Public Health Lab - arrange testing through your local health department

Infection control

- For patients in the hospital, **airborne** precautions from onset of the prodrome (cough, coryza, conjunctivitis) through the 4th day of rash
- For nonimmune health care personnel, exclusion from direct patient care from 5th to 21st day after exposure.

Treatment

- Supportive care plus Vitamin A supplementation: two doses one day apart, plus a third dose 2-4 weeks later if signs of Vitamin A deficiency:
  - < 6 m.o. – 50,000 IU / dose
  - 6-11 m.o. – 100,000 IU / dose
  - ≥ 12 m.o. – 200,000 IU / dose

Prophylaxis

- Determine immune status of all those exposed
  - Adults born before 1957 are generally presumed to be immune from prior disease (but vaccine may be given if unsure)
  - Complete vaccination is two doses of live virus vaccine, at least 28 days apart, with the first dose given at 12 months of age or older (>99% efficacy)
- If susceptible, vaccinate with MMR ***within 72 hrs of exposure***
- Alternatively, if unable to vaccinate (e.g., infants less than 12 mo of age), immune globulin (IG) (0.25mL/kg body weight), maximum 15 mL given IM (if immunocompromised, 0.5mL/kg, maximum 15 mL), administered ***within 6 days of exposure***
- When IG 0.25 mL/kg is given, wait 5 months before vaccinating with MMR or other live viral vaccines. If IG 0.5 mL/kg given, wait 6 months.
- Measles vaccine contraindications and precautions (see vaccine information sheet for complete details):
  - Severe allergic reaction to MMR or vaccine component (gelatin, neomycin)
  - Pregnancy (pregnancy should be avoided for 4 weeks following MMR)
  - Severe immunosuppression (but HIV infection is not a contraindication unless there is evidence of severe immunosuppression)
    - E.g., HIV+ adults with CD4+ T-cells <200
    - Persons receiving large daily doses of corticosteroids (>2 mg/kg/day or >20 mg/day of prednisone) for at least 14 days
  - Persons with moderate to severe acute illness should not be vaccinated until the illness has resolved
  - Receipt of antibody containing blood products (e.g., IG) will interfere with seroconversion to vaccine
  - History of thrombocytopenia

Outbreak Control

Measles outbreaks can be costly and widespread. The key to control is a prompt public health response to identify and ensure vaccination of contacts. *Immediately* report any suspect case of measles, to your local health department or Arizona Department of Health Services at (602) 364-4562.

For additional information about measles

CDC website: http://www.cdc.gov/vaccines/vpd-vac/measles/default.htm
ADHS website: http://www.azdhs.gov/phs/oids/topics_h_z.htm#M

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